We claim:

1. A network node adapted to forward a data packet to a mobile host connected to a radio node by performing a remote method invocation with the data packet as an argument.

2. A network node according to claim 1 comprising:

an input for receiving data packets from an external host having a destination address belonging to the mobile host;

a stationary object associated with the external host belonging to a distributed object framework, the stationary object maintaining an association between the destination address of the mobile host and an object reference for a relocatable object associated with the mobile host;

wherein performing a remote method invocation with the data packet as an argument comprises performing a remote method invocation through the distributed object framework of a method in the relocatable object associated with the mobile host.

3. A network node according to claim 2 further comprising:

a packet filter adapted to identify data packets having the destination address belonging to the mobile host and to send them to the stationary object associated with the external host.

4. A network node according to claim 3 wherein the data packets are IP packets.

5. A network node according to claim 3 further comprising:

a plurality of said stationary objects, one for each of a plurality of external hosts; wherein:

each stationary object has a raw socket interface for receiving and sending packets;

wherein the packet filter is adapted to identify data packets having any one of a plurality of destination addresses and to send each to a particular stationary object responsible for the particular external host from which the packet was received;

each stationary object maintains a mapping between each destination address the stationary object is responsible for and a corresponding object reference of a relocatable object associated with one of a plurality of mobile hosts;

each stationary object upon receiving a data packet having a destination address through its raw socket interface performs a remote method invocation of a method of the relocatable object associated with destination address.

6. A network node according to claim 1 which is a gateway node of a radio access network, the gateway node having a backbone connection to another network.

7. A network node according to claim 6 adapted to receive from mobile hosts data packets destined for external hosts on the another network and to forward the data packets through the backbone connection.

8. A network node according to claim 1 further adapted to function as a gateway node in a next-hop routing network.

9. A network node according to claim 1 further adapted to cause to be generate a stationary object in respect of each of a plurality of external hosts with which the network node is in communication.

10. A network node according to claim 2 wherein the distributed object framework is an object request broker.

11. A network node according to claim 2 wherein the distributed object framework is one of CORBA, DCOM and JAVA RMI.

12. A network node according to claim 1 further adapted to forward all multicast packets to a multicast server.

13. A network node according to claim 1 which is RSVP aware, and which is adapted to establish RSVP sessions over the network.

14. A radio access node adapted to provide data packet service to a mobile host in wireless communication with the radio access node, the radio access node comprising:

a relocatable object associated with the mobile host belonging to a distributed object framework, the relocatable object having a remotely invokable receive data packet method;

the radio access node being adapted to receive a data packet from another network node by having the receive data packet method remotely invoked with the data packet as an argument, and adapted to forward the packet to the mobile host.

15. A radio access node according to claim 14 further comprising:

an input for receiving data packets from the mobile host, the data packets having a destination address external to the network;

wherein, upon receipt of a data packet from the mobile host having a destination address external to the network, the radio access node is adapted to forward the data packet using next-hop forwarding.

16. A radio node according to claim 15 wherein the relocatable object has a raw socket interface through which to receive packets from the mobile host which are then forwarded by the relocatable object using next-hop forwarding.

17. A radio access node according to claim 14 further adapted to send the relocatable object to a different radio access node in the event the mobile host performs a handoff to the different radio access node.

18. A radio access node according to claim 14 further adapted to upon initial connection with the mobile host, search locally for the relocatable object in association with the mobile host, and if not found locally, to request through the distributed object framework that the relocatable object be provided from a different radio access node if in existence, and if the relocatable object is not in existence to generate a new relocatable object for the mobile host.

19. A radio access node according to claim 16 further comprising an IP divert mechanism adapted to forward packets received from the mobile host to the raw socket interface of the relocatable object.

20. A radio access node according to claim 14 adapted to maintain a mapping from object references for relocatable objects to corresponding destination addresses.

21. A radio access node according to claim 14 wherein the relocatable object has an object name which is derived from the IP address of the mobile host.

22. A radio access node according to claim 14 comprising:

data within or associated with the relocatable object maintaining an association between a destination address of a different mobile host and an object reference for another relocatable object associated with the different mobile host;

the radio access node being adapted to receive packets from the mobile host having a destination address belonging to the different mobile host and to forward the packet to the different mobile host by performing a remote method invocation with the data packet as an argument of a method in the another relocatable object associated with the mobile host.

23. A radio access node according to claim 22 further comprising:

for each another relocatable object with which packets are exchanged, a mapping from a destination address of packets destined to a location associated with the another relocatable object to an object reference for the another relocatable object, the object reference allowing remote method invocation on the another relocatable object.

24. A radio access node according to claim 14 wherein:

the relocatable object is adapted to behave as a proxy for the mobile host for multicast-like communications.

25. A radio node according to claim 24 wherein the relocatable object intercepts multicast join messages, modifies them to specify a location of the relocatable object rather than the address of the mobile host, before forwarding them, and wherein the relocatable object receives multicast traffic on behalf of the mobile host and forwards the multicast traffic to the mobile host.

26. A radio node according to claim 24 wherein, upon the relocatable object's relocation at a different access node, the relocatable object is adapted to leave the multicast group, and then rejoin from its new location, all transparently to the mobile host.

27. A radio access node according to claim 23 wherein:

the relocatable object is adapted to behave as a proxy for the mobile host for RSVP-like communications.

28. A radio node according to claim 27 wherein the relocatable object intercepts RSVP-like messages, modifies them to specify a location of the relocatable object rather than the address of the mobile host, before forwarding them, and wherein the relocatable object receives RSVP traffic on behalf of the mobile host and forwards the RSVP traffic to the mobile host.

29. A radio node according to claim 28 wherein, upon the relocatable object's relocation at a different access node, the relocatable object is adapted to tear down an existing RSVP-like connection, and establish a new RSVP-like connection from its new location, all transparently to the mobile host.

30. A radio access network adapted to provide wireless data packet services to a plurality of mobile hosts each having a network address, the radio access network comprising:

a gateway node through which connections to external hosts may be established, the gateway node being adapted to forward incoming data packets specifying destination address to a corresponding stationary object associated with each external host;

a plurality of radio nodes;

a network of data packet routers interconnecting the radio nodes and the gateway node and adapted to perform next-hop forwarding;

a distributed object framework through which methods on objects located on the different network nodes may be remotely invoked;

for each mobile host connected to the radio access network, a respective relocatable object, each relocatable object having a respective receive packet method which is remotely invokable through the distributed object framework;

for each externally located host connected to the radio access network through the gateway node, a respective stationary object;

wherein data packets arriving from an external host at the gateway specifying a destination address which is the network address of a particular mobile host are forwarded to the stationary object associated with the external host which then forwards the packet to the relocatable object associated

with the destination address using a remote method invocation.

31. A radio access network according to claim 30 further adapted to perform normal next-hop forwarding of packets destined for external nodes which are received from mobile hosts by radio nodes.

32. A radio access network according to claim 30 wherein the distributed object framework is an object request broker framework.

33. A radio access network according to claim 30 wherein the packet data network is an all IP network.

34. A method for a network node to forward a data packet to mobile hosts comprising:

maintaining a respective stationary object associated with each of a plurality of external hosts, the stationary objects belonging to a distributed object framework, each stationary object maintaining an association between a respective destination addresses of each mobile host with which the associated external host is in communication, and an object reference of a relocatable object associated with each such mobile host;

receiving data packets from a particular external host having a destination address belonging to a particular mobile host and passing such data packets to the stationary object associated with the particular external host;

the stationary object associated with the particular external host performing a remote method invocation with the data packet as an argument through the

distributed object framework of a method in the relocatable object associated with the particular mobile host.

35. A method according to claim 34 wherein the data packets are IP packets.

36. A method according to claim 34 wherein passing data packets received from a particular external host to the stationary object associated with the particular external host comprises forwarding the packets to the stationary object through a raw socket interface of the stationary object.

37. A method according to claim 34 wherein the distributed object framework is an object request broker.

38. A method according to claim 34 wherein the distributed object framework is one of CORBA, DCOM and JAVA RMI.

39. A method for a radio access node to provide data packet service to a mobile host in wireless communication with the radio access node, the method comprising:

defining a relocatable object associated with the mobile host belonging to a distributed object framework, the relocatable object having a remotely invokable receive data packet method;

the relocatable object receiving a data packet from another network node by having the receive data packet method remotely invoked with the data packet as an argument;

the relocatable object forwarding the data packet to the mobile host.

40. A method according to claim 39 further comprising:

the radio node receiving data packets from the mobile host, data packets having a destination address external to an access network to which the radio node belongs and passing these to the relocatable object;

the relocatable object forwarding the data packets using next-hop forwarding.

41. A method according to claim 39 further comprising:

sending the relocatable object to a different radio access node in the event the mobile host moves so as to be in communication with the different radio access node.

42. A method according to claim 39 further comprising, upon initial connection with the mobile host:

searching locally for the relocatable object in association with the mobile host, and if not found locally, to requesting through the distributed object framework that the relocatable object be provided from a different radio access node if in existence, and if the relocatable object is not in existence requesting the generation of a new relocatable object for the mobile host.

43. A method according to claim 39 further comprising:

upon receipt of packets from the mobile host which specify a destination address of another mobile host connected to the same network as the radio node, forwarding the packets to a relocatable object associated with the another mobile host through a remote method invocation.

44. A method according to claim 39 further comprising:

the relocatable object behaving as a proxy for the mobile host for multicast-like communications.

45. A method according to claim 44 further comprising:

intercepting multicast join messages, modifying multicast join messages to specify a location of the relocatable object rather than an address of the mobile host, before forwarding multicast messages, and the relocatable object receiving multicast traffic on behalf of the mobile host and forwarding the multicast traffic to the mobile host.

46. A method according to claim 45 further comprising, upon the relocatable object's relocation at a different access node, the relocatable object leaving the multicast group, and then rejoining the multicast group from its new location, all transparently to the mobile host.

47. A method according to claim 39 further comprising:

the relocatable object behaving as a proxy for the mobile host for RSVP-like communications.

48. A method according to claim 47 further comprising:

the relocatable object intercepting RSVP-like messages, modifying the RSVP-like messages to specify a location of the relocatable object rather than an address of the mobile host, before forwarding RSVP-like messages, and the relocatable object receiving RSVP traffic on behalf of the mobile host and forwarding the RSVP traffic to the mobile host.

49. A method according to claim 48 further comprising:

upon the relocatable object's relocation at a different access node, the relocatable object initiating a tear down of an existing RSVP-like connection, and initiating establishment of a new RSVP-like connection from its new location, all transparently to the mobile host.